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TWO WEEKS IN SOUTHWESTERN NOVA SCOTIA

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Stimulated by our chance finding of *Lachnanthes* in 1940, my wife and I returned to Nova Scotia for part of August, 1941. We established ourselves at Mill Village, on the lower Medway River, Queens County, selecting that region because the Medway valley abounds in lakes and had not been visited by the Gray Herbarium expeditions of 1920 and 1921. We chose our headquarters happily; our landlady, Mrs. F. Laurie Mack, not only provided us with comfortable lodgings, well suited for botanical work, and excellent food, but was interested in our activities and most helpful in securing for us needed information.

We attempted no strenuous excursions and made no general collections, taking only plants as to the identity of which we were in doubt or which seemed likely, from Prof. Fernald's reports of 1921 and 1922 (in RHODORA, vols. 23 and 24), to be of some geographic interest. Using the car, we scouted along the coast from Liverpool to Bridgewater, followed the Medway from the sea to Ponhook Lake, and visited the more accessible lakes along route 8 from Liverpool to South Brookfield, plus several of those to the east of the Medway. In this area and on the basis noted above, we secured 68 selected numbers.

The whole area visited is in what Goldthwait (Physiography of Nova Scotia, Can. Geol. Surv. Mem. 140 (1924)) calls the southern upland. It is not high, however—Ponhook Lake is 226 ft. above sea-level—and in the Medway valley has no bold relief, though eastward in Lunenburg County the hills become

higher and more rugged. The underlying rocks are the folded slates and quartzites of the gold-bearing series.

Where not cleared for cultivation, the region is covered with a mixed forest of spruce, fir, hemlock, white pine, beech, birch, red maple and red oak (*Quercus borealis*). There is one barren occupied by a sparse stand of red pine with a dense ground-cover of *Arctostaphylos* and *Corema*. A considerable area on route 8, north of Middlefield, supports a nearly pure stand of red oak with an undergrowth of huckleberry, witch hazel, *Viburnum cassinoides* and the like. The deep hollows are, of course, occupied by lakes; the shallower by black-spruce bogs or sometimes by grassy swales where wild hay is often cut by farmers living nearby. We saw no raised bogs like those of eastern Maine. Rich woods are almost entirely absent; one small bit is to be found near Cameron Lake. In the immediate vicinity of the sea the vegetation becomes more boreal; the proportion of spruce in the forest increases notably and such plants as *Vaccinium Vitis-idaea* var. *minus* and *Empetrum nigrum* appear on exposed banks and ledges. As on Cape Cod, the best botanizing is to be found on lake-margins, which here are gravelly, pebbly, rocky or covered with peat. Our investigation of such habitats was more or less interfered with by heavy rains which raised considerably the water-level of streams and the smaller lakes. Fortunately, the larger lakes were not much affected; their strand-floras remained accessible and in reasonably good condition.

As would be expected, the flora of the Medway valley conforms closely to the botanical picture of the western counties drawn in Fernald's reports; but in some details it seems to differ. We did not see *Schizaea*; that tiny plant, however, we might have overlooked. But we should not have overlooked *Polystichum acrostichoides*, which Fernald states the Gray Herbarium botanists saw wherever they went, but which we did not find at all. Such southern and coastal species as *Woodwardia areolata* and *Sabatia Kennedyana* are apparently absent. *Habenaria blephariglottis*, reported by Fernald as abundant in Yarmouth County, we saw only once and that, appropriately, in the vicinity of our first station for *Lachnanthes*. On the other hand, as the list which follows will show, the Medway valley harbors some species, for the most part also of southern affinity, not yet found to the west or east.

In addition to our own collections, we had the privilege of examining an excellent little herbarium prepared by Mr. P. V. Wessman of Liverpool. His records, so far as they are noteworthy, are included in the appended list. Mr. A. E. Roland, the Provincial Botanist, has very kindly furnished helpful data of distribution, drawn from his own field-work and from specimens in the herbarium of the Nova Scotia Department of Agriculture at Truro and in the Canadian National Herbarium. To both these gentlemen, our thanks are due.

Our list follows the plan of Prof. Fernald's reports, to which it is a modest supplement. Introduced species are in italics. Species new to Nova Scotia are indicated by a single asterisk, those new to Canada by two. Place of publication is given for names not in current manuals. Localities are in Queens County unless otherwise indicated. Local extensions of range and even new stations have been rather freely included in the hope that such records may be useful to Canadian botanists who are studying the distribution of Nova Scotian plants in detail. Numbers, unless otherwise noted, are our collection-numbers.

SCHEUCHZERIA PALUSTRIS L., var. *AMERICANA* Fernald, in *RHODORA* xxv. 178 (1923). Wet, sphagnous swale, Moosehorn Lake (7094). Recorded by Fernald from Shelburne Co. only; Roland reports it from Lily Lake, Centreville, Kings Co. Apparently not common in western Nova Scotia.

DISTICHLIS SPICATA (L.) Greene. Upper border of salt marsh, Indian Cove (7086). Since there seem to be few, if any, collections of this species from the south coast, this station is perhaps worth recording.

ORYZOPSIS PUNGENS (Torr.) Hitchc. Small clumps among dense carpets of bearberry, dry barren east of Greenfield (7084). Recorded by Fernald as characteristic of barrens in Shelburne and Lunenburg Cos.

** *PANICUM LONGIFOLIUM* Torr. Stony strand of Second Christopher Lake (7095).

This material, with open panicle, spikelets rarely more than 2.6 mm. long, second glume equalling the sterile lemma, and indurated lemma (hardly yet in the caryopsis stage) 0.6 mm. wide, seems clearly referable to typical *P. longifolium* as defined by Fernald (*RHODORA* xxiii. 193). Specimens from First Christopher Lake (7072), though rather young, seem also to belong here.

ELEOCHARIS OBTUSA (Willd.) Schult. Submersed by high water, strand of Long Lake, between Buckfield and Waterloo, Lunenburg Co. (7107). Not seen elsewhere and apparently infrequent in this part of Nova Scotia, though common enough in the central and eastern portions of the province.

** *SCIRPUS LONGII* Fernald in *RHODORA* xiii. 6 (1911). Peaty marsh, shore of Ponhook Lake (7116). One battered individual, probably of this species, at Moosehorn Lake. Hitherto known only from southern New Jersey, eastern Massachusetts and at a single station in Central Connecticut.

CAREX VULPINOIDEA Michx. A few stools in moist ground in an abandoned sawmill clearing, Lake Rossignol Reservoir (formerly Sixteen-mile Lake) (7099). Reported by Fernald from Annapolis Co.; not otherwise known from Nova Scotia.

CAREX LENTICULARIS Michx. var. *BLAKEI* Dewey. Stony strand of First Christopher Lake, South Brookfield (7069). Probably also along the Medway River. Recorded by Fernald from Lunenburg Co. only.

CAREX CRINITA Lam. var. *MINOR* Boott. On the pebbly and mucky strand of Cameron Lake and on other lake-shores. Spikes ascending or spreading, short-peduncled, more or less aggregated at the summit of the culm and not over 3.5 cm. long; the scales short for the species, not exceeding the upper perigynia and commonly less than twice as long as the lower. From the material at hand, this appears to be the prevailing, if not the only, phase of the species in Nova Scotia. It is apparently not common in the western counties.

CAREX ARCTATA Boott. Shaded bank above Beartrap Lake (7058). Apparently frequent in rich woods in eastern Nova Scotia and in the north as far west as Digby Co.; not reported from the southwestern counties.

SMILAX ROTUNDIFOLIA L. Thickets at several points along the Medway River (7102) and shores of Ponhook Lake near the outlet. Reported by Mackay (Proc. Trans. Nova Scotia Inst. Sci. xi. pt. 2, 287 (1906)) from Yarmouth Co. and by Fernald from Digby and Shelburne Cos.

LACHNANTHES TINCTORIA (Walt.) Ell. In *RHODORA* xliii. 36 (Jan., 1941), I reported this species from the shores of Ponhook Lake. From the Highway Department map which I was then using, the body of water in question appeared to be only an arm of that lake. A more detailed map and some enquiries, however, show that, though connected with Ponhook, it is regarded as distinct and goes by the name of Beartrap Lake.

At the original station, there were only about a dozen individuals of *Lachnanthes*. This year a similarly small station was

found on the veritable shore of Ponhook Lake near the mouth of Kedron Brook, and a third, much larger, in a peaty marsh by the lake-shore farther west (7117)—the same in which *Scirpus Longii* was found. Here there were scores of plants, though only a few had flowered.

LOPHIOLA AMERICANA (Pursh) Wood. A third Nova Scotia locality on peaty strands of Ponhook Lake (7110). Not abundant at any one place, but scattered for some miles along the lake-shore. Roland adds an additional station at the end of Brier Island, Digby Co.

HABENARIA FLAVA (L.) Spreng. Pebbly strand of Medway River at Mill Village (7086) and above Charleston (7103).

This, though not extreme, appears to be true *H. flava* as defined by Fernald (*RHODORA* xxiii. 147), the lowest leaves being lanceolate and acute rather than elliptic and obtuse, and the spike rather slender and loose. Recorded by Fernald from Yarmouth Co. only.

CORALLORRHIZA MACULATA Raf. Dry deciduous woods, above Cameron Lake (7065). Large plants 4.5 dm. tall. "A common species inland and northwards in the province" (Roland); apparently not common in the western counties. Not collected by the Gray Herbarium expeditions south or west of Annapolis Co.

* *SALIX PEDICELLARIS* Pursh. Sphagnous swale north of Middlefield (7098). Though known from Newfoundland, Quebec, New Brunswick and locally south to Connecticut, this species seems never to have been reported from Nova Scotia. The Middlefield material has the leaves glaucous beneath (var. *HYPOGLAUCA* Fernald).

** *ALNUS SERRULATA* Ait. Thickets on the banks of Cameron (7059) and First Christopher lakes.

Not authentically known east of southwestern Maine, though reported as "rather common in moist ravines and hillsides at Old Fort and probably all along the coast" by W. A. Stearns in his "Notes on the Natural History of Labrador" in *Proc. U. S. Nat. Mus.* vi. 134 (1883). Stearns's specimens are in the United States National Herbarium; but Mr. C. V. Morton, who has very kindly looked up the matter for me, states that no material of either *A. serrulata* or *A. incana* from Labrador is to be found there. That the former occurs in Labrador is unlikely; St. John's opinion that Stearns's plant was some form of *A. incana* is in all probability correct. (*Mem. Victoria Mus.* cxxvi. 81 (1922)).

POLYGONUM COCCINEUM Muhl. f. *TERRESTRE* (Willd.) Stanford in *RHODORA* xxvii. 162 (1925). Mucky slough at Cameron Lake (7064); Medway River above Charleston. Reported by Fernald (as *P. Muhlenbergii*) from Yarmouth Co. only.

POLYGONUM ROBUSTIUS (Small) Fernald in *RHODORA* xxiii. 147 (1921). Shores of Medway River above Charleston; strand of First Christopher Lake, South Brookfield (7073). Recorded by Fernald from Yarmouth, Digby and Annapolis Cos.; Roland reports it as common in parts of Kings Co.

POTENTILLA PALUSTRIS (L.) Scop. Fresh-water marsh, Broad Cove, Lunenburg Co. (7092). Roland reports this species as very common in the central and northern counties, but rare in the southwest. He has collected it at Hubbards, near the Lunenburg-Halifax county line (his no. 38,298) and at Butler's Lake near Gavelton, Yarmouth Co.

AMPHICARPA BRACTEATA (L.) Fernald in *RHODORA* xxxv. 276 (1933). Moist roadside thickets, South Brookfield (7068). Recorded by Fernald from Halifax Co. only and, though common in the north-central area (Roland), apparently rare in the southwest. Roland reports a specimen from Bridgewater, Lunenburg Co., in the Canadian National Herbarium.

HELIANTHEMUM CANADENSE (L.) Michx. A large colony on the border of dry, mixed woods, Greenfield (7120; associated with *Aster undulatus*). The only previous report from Nova Scotia appears to be that of Macoun from Kingston, Kings Co. (Cat. Canadian Pl. i. 491)

VIOLA PRIMULIFOLIA L. Shaded strand of the Medway River above Charleston (7104), of Ponhook Lake near outlet, and of the Mersey River near Liverpool (*Wessman*). Reported by Fernald from Yarmouth and Shelburne Cos. and from Halifax Co. by Macoun and Burgess, Bot. Gaz. ix. 6 (1884) and by Lawson, Trans. N. S. Inst. Sci 1890-91: 98.

PROSERPINACA PECTINATA Lam. In the Medway valley much more common than *P. palustris*. The latter we saw only once, on the muddy river-bank below Mill Village; the former was found at the same place (7076), at other places along the Medway, at Second Christopher Lake, Ponhook Lake and in a wet swale in the woods north of Middlefield.

LYSIMACHIA CILIATA L. (*Steironema ciliatum* (L.) Raf.). Banks of the Mersey River near Liverpool (*Wessman*). Not seen by us. Rare in the western counties; reported from Annapolis by Lindsay and from Yarmouth by Fernald, and collected by Fernald & Long near Bridgewater, Lunenburg Co. For the name, see Fernald in *RHODORA* xxxix. 438 (1939).

SAMOLUS PARVIFLORUS Raf. Am. Monthly Mag. ii. 176 (1818). To the few stations recorded by Fernald may be added: muddy shores of the Medway estuary (7075). For the name, see House in Bull. New York State Mus. ccliv. 558 (1924).

APOCYNUM SIBIRICUM Jacq. f. *ARENARIUM* (F. C. Gates) Fernald in *RHODORA* xxxvii. 328 (1935). Many vigorous, sprawling plants on stony upper strand of Ponhook Lake; none in flower or fruit (7111). Seen only here and apparently not common anywhere in Nova Scotia. Represented in the Gray Herbarium from Lunenburg, Hants and Pictou Cos. Fernald's reports of *A. cannabinum* are to be referred here.

CUSCUTA GRONOVII Willd. On various herbs and shrubs, thickets along the Medway River at Mill Village (7122) and near the outlet of Ponhook Lake. Apparently rare in Nova Scotia: Macoun has a single report from Grand Lake, Halifax Co.; Fernald found it only in the Lahave valley, Lunenburg Co.

** *GRATIOLA AUREA* Muhl., f. *LEUCANTHA* Bartlett in *RHODORA* ix. 123 (1907). Forming small pure colonies on the pebbly strand of Ponhook Lake (7112). Reported by Pennell (*Monog. Acad. Sci. Philadelphia* i. 72 (1935)) from Delaware to eastern Massachusetts. A striking form, the corolla pure white except for a yellow tinge on the inside of the throat.

** *UTRICULARIA INFLATA* Walt., var. *MINOR* Chapm. *Fl. so. U. S.* 282 (1860). A single flowering individual in rather deep water of Ponhook Lake (7113). Not previously known east of Hancock Co., Maine. The report (of *U. inflata*) from "Lower Canada (Pursh.);" given by Macoun was an error; Pursh wrote "lower Carolina". Var. *minor* is, of course, the only phase of the species which occurs in the North.

UTRICULARIA SUBULATA L. Margin of the Medway River, Charleston (*Wessman*). Collected by the Gray Herbarium expeditions in Digby, Yarmouth and Shelburne Cos.

CEPHALANTHUS OCCIDENTALIS L. In abundance at Prof. Wetmore's station at Cameron Lake (7063; see *RHODORA* xxiv. 204) and at various points along the Medway as far down as Mill Village.

** *SOLIDAGO SEMPERVIRENS* L. forma **ochroleuca**, n. f., ligulis pallidissime flavis fere albis. Rays very pale yellow, almost white.—NOVA SCOTIA: scattered plants in a salt marsh, Parrsboro, Cumberland Co., Aug. 12, 1941, *C. A. & Una F. Weatherby* no. 7056, TYPE in Herb. Gray. MAINE: Isle au Haut, Sept. 12, 1916, *N. T. Kidder* (see *RHODORA* xix. 20 (1917)).

Similar pale-rayed forms, though far from common, are known in at least two other species of *Solidago*, *S. racemosa* (f. *leucantha* Fernald in *RHODORA* xx. 172 (1918)) and *S. flexicaulis* (*Conn. Geol. Nat. Hist. Surv. Bull.* xlviii. 83 (1931)).

SOLIDAGO TENUIFOLIA Pursh, var. *PYCNOCEPHALA* Fernald in *RHODORA*, xxiii. 293 (1922). On most lake-shores in the Medway valley (7096); one of the most characteristic species of such habitats.

ASTER UNDULATUS L. In a red-pine-bearberry-*Corema* barren (7084) and at border of dry woods, Greenfield. Previously reported from Nova Scotia only in the Lahave valley, where it was collected by Fernald & Long in 1921 and, according to Roland, by Macoun in 1910.

RUDBECKIA HIRTA L. sens. lat. Brooklyn (*Wessman*); not seen by us.

Roland states that the species is common in the northern and central parts of the province and that nearly all the material he has seen belongs to var. SERICEA (T. V. Moore) Fernald. I did not check this point with regard to *Wessman's* specimen; but certainly no form of the species is at all generally established in the western counties.

LACTUCA HIRSUTA Muhl. var. SANGUINEA (Bigel.) Fernald in RHODORA, xl. 481 (1938). Roadsides at border of dry, mixed woods near Lake Rossignol Reservoir (Sixteen-mile Lake) (7100) and Greenfield (7115). Apparently not reported east of Yarmouth and Shelburne counties.

GRAY HERBARIUM

BETULA POPULIFOLIA IN VIRGINIA AND ITS
VARIETY LACINIATA IN MASSACHUSETTS

DONOVAN S. CORRELL

(PLATE 708)

While driving through Fisher's Gap (3061 ft. alt.) in the Shenandoah National Park, Madison County, Virginia, I observed several saplings of *Betula populifolia* growing with the shrubby vegetation which covers the poor, rocky soil at that point. Upon investigating further away from the roadside, a number of saplings were found scattered throughout the area. This is apparently the first report of the occurrence of *B. populifolia* in Virginia and represents the southernmost station known for this species. Gray's New Manual of Botany, 7th edition, gives the distribution of this species as from Prince Edward Island to Delaware, west to Lake Ontario.¹

A plant of *B. populifolia* var. *laciniata* Loud. was found during the summer of 1941 in an old field in Auburndale, Massachusetts. The individual (PLATE 708) consists of a cluster of several sap-

¹ Since this went into type a report of this species in Virginia was published in *Castanea*, 6: 103, 1941.